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EDITORIAL DEPARTMENT NOTE

The end product of the accounting process is the information conveyed by accounting reports, and the value of the accounting department in any business is largely determined by the extent to which these reports are used by the various levels of management. In each case at least two people are concerned—the accountant who prepares the report and the executive who receives it. Lack of understanding on either side may seriously reduce the value of the report for management purposes. In the first article in this issue of the *Bulletin*, Dean Jackson appraises the part played by each, with particular emphasis on the need for greater recognition on the part of the industrial accountant of the managerial aspects of his work.

DEAN J. HUGH JACKSON, the author of this article, is too well known to N. A. C. A. members to need detailed introduction here. He is a graduate of the Harvard Graduate School of Business Administration, a C.P.A. of several states, and the author of numerous books and articles on accounting subjects. He has taught accounting at the University of Minnesota, the Harvard Graduate School, and Stanford University, and has been Dean of the Graduate School of Business at Stanford University since 1931. Dean Jackson served as National President of N. A. C. A. in 1938-39.

In the opinion of the author of our second article, whether or not wage incentives pay depends largely on the way in which they are developed, installed, administered, and maintained. In this article Mr. Nickerson outlines certain basic principles which should be observed.

J. W. NICKERSON, the author of this article, is well known for his work in promoting wage incentives while serving as Director of the Management Consultant Branch (later Division) of the War Production Board. A graduate of Massachusetts Institute of Technology with the B.S. degree in Mechanical Engineering, Mr. Nickerson is an industrial engineer who has specialized in the field of labor relations. During a period of 25 years association with Cheney Brothers, silk manufacturers, his duties involved technical research, industrial engineering, and labor relations, and included two years as General Superintendent in charge of plant operations. Mr. Nickerson is at present connected with the engineering firm of Bigelow, Kent, Willard & Co. in Boston, as Manager of the Industrial Relations Division.

There is more than meets the eye in designing printed forms and maintaining control over them. Problems of obsolescence of forms, proper sizes, control over their issue, numbering systems, etc., are all matters that must receive proper attention.

CHARLES F. MARGESON, author of the last article in this issue, is a resident of Hartford, Conn. He attended the public schools in that city and is a graduate of LaSalle Extension University. He received his first business experience at the Hartford Works of the Underwood Corp., where he was employed from 1935 to 1940 in various capacities in the cost and plant accounting departments. Following a season with the public accounting firm of Warren M. Brown, C.P.A., he joined the Henry & Wright Mfg. Co. in 1941 as Accountant, where he is presently employed as Assistant to the Treasurer.

Articles published in the *Bulletin* present many different viewpoints. In publishing them the Association is not sponsoring the view expressed, but is endeavoring to provide for its members material which will be helpful and stimulating. Constructive comments are welcomed and will be published in the Forum Section of the *Bulletin*.

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COST ACCOUNTING IN THE EDUCATION OF MANAGEMENT

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DURING the approximately thirty years that I have been engaged in the practice and teaching of accounting, there have been far-reaching developments both in the techniques and in the applications of the science. The almost universal need for financial accounting has brought many improvements in the methods of record keeping, and numerous refinements have resulted largely because of extensive necessary reporting, not only to banks and to owners, but also to the Department of Internal Revenue, the Securities and Exchange Commission, and various other government agencies.

And in the field of cost accounting, the techniques of control have developed even more rapidly: in fact, much more rapidly than the average business executive has advanced in his comprehension of them. This means, unfortunately, that in many instances, even where the most modern systems of cost finding are skilfully employed, there is no general appreciation or understanding of their possibilities by the top management, and consequently their value never has been fully exploited. As I stated a year ago in a paper presented before the San Francisco Chapter of N. A. C. A., I suspect that this condition can be partly or largely laid at the door of the accountant himself, because he has been so busy doing his job well that he has not had time to keep the executives of his company fully apprised regarding the uses to which his figures might be put. Moreover, comparatively speaking, effective cost control methods are found in relatively few business organizations, particularly in organizations of small and medium size. A very big job of education, therefore, remains to be done; even among larger companies management must be educated away from the all too prevalent attitude that while cost control methods may be valuable, or actually essential for the other fellow, they would be largely or wholly ineffective or unnecessary in his particular business.

The Accountant's Relation to Management

During these past thirty years there has been much talk and numerous written expressions regarding the need for education in accounting matters. While the greater part of this has related to the education of the accountant himself, primarily as regards the legal and technical aspects of various accounting matters, much has also been said regarding the need and opportunity of educating management in the understanding and use of the accounting mechanism. Such education means that both accountants and management must be made to recognize the meaning and importance of new situations as they arise, and must be able to meet them on the basis of both an experienced judgment and a command of basic principles. Accounting techniques are important, and must obviously be mastered by the successful accountant; these will undoubtedly continue to be improved over the years. But it is even more important that both the accountant and the business manager shall have an understanding of accounting's relation both to the other functional fields of their business and also to the basic economic activities of all business concerns.

In discussing cost accounting in its relation to the education of management it is well to have definitely in mind what is meant by management. While concepts may vary, for purposes of this discussion I think in terms of three levels of management; namely, the top executive level, the departmental executive level, and the foremanship or minor executive level. These various management groups each have their varied and difficult problems to solve; is it not self-evident that their primary interest in cost accounting will relate to the manner in which it may aid in the solution of their own particular management problems? I wonder, therefore, if this educational problem is not primarily one of further education of the accountant! The operating management is not interested in pretty reports, beautifully ruled statements, nicely balanced accounts, etc., except to the extent that these are of direct value to them in handling more effectively the particular problems which are their responsibility to solve.

To use an illustration outside of the accounting field, it is generally taken for granted that it is the responsibility of a manufacturer to develop a product whose design, quality, and usability

will meet the requirements and desires of those who are to use it. Does not the accountant have an equal responsibility as regards the product which he is to produce? While it is desirable and may be necessary for the operating management to cooperate with the accountant in deciding what kind of information is needed, it is certainly the job of the accountant to furnish to management that information, prepared in the form which will be most easily understood by the operating man and at the time when the data will be most useful. I just wonder if the accountant has always done this! Or have we tried to compel management, the consumer of our accounting product, to adapt itself to the accounting as we have preferred to present it? It is my opinion that a very large part of this educational program consists in making ourselves so familiar with the problems confronted by the various levels of management in our organizations that we can prepare and present quickly, in a form that will be readily understood by the nontechnical person, the data that will aid the foreman, the departmental executive, or the members of top management in the prompt solution of the problem or problems that immediately confront them.

The Need For Cost Control

Many managements had very little experience with cost accounting prior to the war, and during the war, especially in the case of those companies engaged in war production work, cost accounting frequently was forced into the organization by events outside management's control. *Cost determination* was necessary in meeting various statutory requirements of the numerous wartime acts, and because of this many of these managements learned for the first time that much valuable information could be provided by cost accounting methods.

Now that the war is over these managements will increasingly think of planned activities in terms both of efficient operation and of corresponding low cost. This means that cost accounting will, more commonly than ever before, become an aid in furthering production efficiency, in controlling costs, and in measuring profit margins under conditions of keen trade competition. Because of this cost accounting will experience a definite shift in emphasis from use for contract-cost determination to the actual control of cost and, in keeping therewith, the cost accountant will have many

opportunities to demonstrate that this technical knowledge can and will pay dividends to his company. It is essential that all levels of management be made to realize this truth.

As an example on one way in which accounting can assist management in these matters, it will become increasingly important to combine research, design, and technology in the building of quality goods at reasonable cost; it will be the job of the cost accountant to put together the elements of that cost, both as an advance estimate and as they actually prove to be. Moreover, with government continually intruding itself into business it becomes more and more imperativve to know not only the true cost of making the product, but also that of distributing it to the consumer. Both cost determination and cost control will become, more largely than ever before, essential parts of modern industrial organization.

However, beyond all this, even the control of costs in the postwar period will not be sufficient in all cases. Cost control must frequently be accompanied by cost reduction; operating executives must be educated to have an understanding and appreciation of the need for economy of operation (a factor largely absent during the war period); a cost consciousness must be developed, which means that any cost accounting system which is to perform adequately must also bring about an understanding by each responsible head of the make-up and the content of the accounts measuring the results of his management. A positive, constructive attitude must result; management must be indoctrinated with the concept that costs can be controlled and, in many instances, can be reduced.

This means that each member of management must have a clean-cut concept of his duties, responsibilities, and authorities, and that he must get away entirely from any idea that cost control and cost reduction are the "other fellow's doing." Managers and supervisors, and even the general employee, must come to feel that it is a moral responsibility of the management of private enterprise to develop economy of operation and thereby to produce goods as efficiently and cheaply as possible. To accomplish this it is the duty of management to organize and reorganize to meet changing conditions, to determine and divide duties and responsibilities, to set tasks and measure performance, and to take such corrective action as necessary when performance is less than it

should be. It is management's job to recruit, train, and develop an efficient staff, to provide adequate motivation for plant personnel, to meet soundly determined production programs, and to spike erroneous beliefs regarding company policies that would tend to prevent or preclude cost control and cost reduction.

What Is Cost Control?

All of this means that the cost accountant himself must have a very definite and clean-cut concept of what is meant by cost control. In discussing this subject at the 1938 National Conference of N. A. C. A. in Chicago, I defined cost control as "the guidance and regulation of the internal operations of a business, by means of modern methods of costing, through which manufacturing and sales performances are measured." Such a program touches upon and affects the work of practically every person in the business establishment; hence its possibilities as a working tool should be accurately known not only by the cost accountant but by every level of management, and its procedures should be continually employed in an attempt to secure lower costs and improved operating performance. Cost control has as its purpose the leading of management into a searching examination of its working plans, methods, organization, physical facilities, and manpower, in order that defects and weaknesses may be discovered and corrected.

It would seem that here the cost accountant has an unparalleled opportunity to demonstrate his value and the worth-whileness of the cost accounting method in the whole program of the business. Not only should the cost accounting system be simple itself but that simplicity should also extend to the so-called paths of authority, which pass from the administrators who determine accounting policy to the departmental or division executives who are responsible for carrying out that policy and on to the employees who perform the actual operations. It is so easy for the cost accountant to become lost in a maze of forms, records, procedures and methods and to forget entirely that the "system should always be a servant, not a master." The foremen and the departmental managers must be made to feel that the cost accounting is definitely assisting them and their departments in reaching their goal. While the cost department may be responsible for pointing the way to lower costs, every foreman and department manager, including supervisors and

major executives throughout the organization, must be educated to realize that they have a share in the responsibility of bringing this about. The purpose of cost accounting is to aid management, not to find fault with it.

Furthermore, both management and the cost accountant must realize that efficient cost control cannot be exercised through accounts alone but must be based upon harmony and cooperation between the cost accountant and the operating man. Here the responsibility is peculiarly the cost accountant's, for he must gain and hold the confidence and cooperation of the operating people if his cost accounts are to be other than dead, mechanical things. The correctness of the cost accounts, and therewith the value of the entire system of cost control, is largely dependent upon the accuracy of the original sources of cost information. It is fundamental, therefore, that the cost accountant and the operating man work in close cooperation if responsibility for cost control is to be definitely allocated and maintained. In fact, it is my opinion that such a balanced combination of responsibility and cooperation is the very lifeblood of cost control.

The Importance of Reports

The prompt presentation of important cost information is in my opinion the most important single factor in the education of management regarding the value of cost accounting in the daily conduct of business affairs. The form and content of these reports is most important. Each member of management should receive specific information covering the scope and nature of the activities for which he is responsible. This means that reports must be broken down into certain classes or groupings, depending upon the executive level for which they are prepared. Moreover, within those groupings the cost accountant must take into account the differences in the training, background, experience, and general outlook of the individual perusing the material. In general these executives may be grouped somewhat as follows:

1. Top executives, consisting of the chairman of the board, the president, vice presidents, and major functional heads. These executives want over-all reports on such matters as total production, total costs, costs by product or department, total employment,

total payrolls, total sales (units and dollars), total net profit, profit by lines or products, earnings per share of capital stock outstanding, etc.

2. Second-line executives, consisting of superintendents, assistant managers, department heads, and the like. These secondary executives want reports that will summarize the activities in their department or field of interest, such as the cost of handling materials, of engineering, of repair work, of machine operation, of the inspection of product, etc.

3. Minor executives, including chief clerks, foremen, gang bosses, and the like. These individuals want reports which will show output and cost per man or machine or group, reports showing overtime costs, spoilage reports, reports of lost time, machine idleness and from what cause, reports revealing why workers failed to earn their bonus, and many similar matters. Such reports should relate specifically to that part of the business for which the individual receiving the report is responsible.

Cost reports should be submitted as soon after the period—day, week, or month—as possible. The value of such a report, generally speaking, is in inverse ratio to the length of time necessary for its preparation! A stale report is of little or no value. A report "hot off the griddle" is of inestimable value.

Moreover, such reports should be brief and presented in as simple a way as possible. In discussing cost reports recently with the executive vice president of a large Pacific Coast corporation, this executive stated that the reports coming from their cost department were generally unsatisfactory because (1) the reports were too long in being prepared and so were of little help in correcting conditions on which they reported; (2) the reports were too long, so that the members of management receiving them did not have time, along with their numerous other duties, to peruse them; (3) in some instances the persons who should have received the reports did not get them; and (4) those who did get them frequently could not understand them.

Examples of Effective Reporting

In order to be somewhat more specific, may I mention several examples of effective reporting. One large corporation, with mines and manufacturing plants scattered throughout the United

States, has for years followed the practice of preparing monthly balance sheet and income statements for its top executives and having these in their hands within forty-eight hours of the close of the month. Each outlying plant telegraphs in code its trial balance and other essential data before the accountant leaves the plant on the last day of the month. These figures, which are sufficiently accurate for all practical purposes, are consolidated the following day by the head office, and by the morning of the second of the month the typed reports are on the desk of each director and major executive.

A different type of report is prepared daily for the top executives of a large Pacific Coast department store. Each morning by nine-thirty o'clock all major executives have received a report showing for the previous day the cash and charge sales and purchases by departments, cash collections on account for the entire store, other miscellaneous receipts and disbursements, and cash balances. Various types of weekly and monthly reports are also prepared; speed in their preparation is constantly stressed.

In the case of a large industrial company, every foreman receives by ten o'clock each morning a report on the activity for which he was responsible the preceding day. The report covers matters which were below normal for the day before. For example, if costs jumped the foreman can immediately ascertain why: Did materials fail to arrive? Did a machine break down? Was the current shut off? Was there a green operator on the machine? Was the operator ill? Whatever the trouble, immediate steps can be taken to correct the situation as regards the current day's work.

Another large industrial concern provides each foreman with a daily "performance report", showing for the previous day all operations *costing* more than they should. The foreman is given the actual cost, what the cost should be (meaning the standard cost), and the reasons for the excess, that is, whether it was a "fall down" operator, a "high rated" operator, a machine breakdown, or what. He is also given the total actual labor cost in his section for the day, together with the cost figure. Some of these failures to meet standard performance are unavoidable; in other instances immediate action can be taken to correct the difficulty.

In somewhat the same way another company furnishes its foremen with a weekly cost report on spoilage. This report shows for each operator the total units produced, the total number passing inspection, the total number spoiled, the percentage of spoilage, the cost per unit spoiled, and the total cost of spoilage for the week. As would be expected, the foremen take pride in keeping their spoilage cost just as low as possible.

Another report shows weekly the idle machine time in each section. This lists the individual machines, the normal operating hours, the idle hours, the idle time burden rate for each machine, the total cost of idle time per machine and for the section, and the reason for idleness on each machine. Again, some of this idleness may be unavoidable but much can be corrected. The report at least gives the foreman a definite incentive to apply such corrective methods to his own section or department as may be possible to bring about the elimination of the unsatisfactory conditions.

These reports, if presented in simple form and in the shortest possible time, will cause operating management not only to have respect for the cost accountant and the cost accounting department, but will actually cause it to seek them out to aid in increasing the efficiency of each department or section, and perhaps to enhance the earnings of the workers and of the supervisor himself.

On the other hand, I have examined accounting reports prepared by cost departments for internal consumption within large business organizations that have contained more than forty single-spaced typewritten pages, when five or six pages at most would have set forth the really important matters. These long reports are seldom read; they are generally too technical for some executives to understand, and too time-consuming for all.

May I repeat, therefore, that all reports prepared by the cost accounting department for the use of management should be prepared with the utmost rapidity, they should be accurate beyond question, they should be simple in form, and each type of report should be uniform throughout the entire organization and from period to period. Whether prepared for foremen or for any other level of management the information contained in these reports

should be (1) such that action can be based upon it, (2) related to the activities of the individual or group, and (3) sufficiently detailed to indicate clearly the factors that created the conditions. Such reports become a real tool of management and make the system of cost accounting a dynamic force in the business organization.

Conclusion

In conclusion, I surmise that you have already decided it to be my opinion that the problem of educating management as to the value and uses of cost accounting resolves itself partly or largely into further educating the cost accountant himself with reference to the managerial aspects of his work. I believe that the postwar years will see a growing consciousness throughout the top management of American industry for a more positive preplanning and directing of the internal affairs of our business organizations.

During the past fifteen years our industry has gone through a major depression, a social revolution, and a five-year war. Whether or not it is facing another depression it is certainly going through a most difficult period of readjustment. Therefore, in every department of a business, the way in which the organization functions, the adequacy and competency of the people animating the organization's structure, the control of production and distribution costs, and the machinery of recruiting and maintaining the best possible personnel are of fundamental importance.

Moreover, it is important that all personnel understand the fundamental nature of business costs, that they realize that cost control touches upon and affects the work of every person in the entire company, and that they be enthused with the possibilities of cost control as a working tool to be employed continuously in the securing of lower costs and improved operating performance.

Finally, the cost personnel itself should definitely understand that the cost accounting is always subject to revision when necessary to provide more adequate control. Adequate cost control means adjusting the cost accounting system to changing conditions and needs, providing for periodic spot checks of expenses or products not individually and specifically exhibited by the regular cost reports, making adequate analyses of regular monthly cost and operating results, and providing a systematic analysis of lower

profit items to determine where to concentrate some of the cost reduction facilities. It also means continuous and systematic search for better, cheaper and more effective methods, processes, and equipment, and for the indoctrination throughout the organization of the concept of cost accounting and cost control as a cooperative endeavor, beneficial to all employees as it contributes to the economical operation of the entire enterprise. If the cost accountant himself and all levels of management throughout the organization can be brought to regard cost accounting and cost control in this light, it will bring about a new day in American industry.

DO INCENTIVES PAY?

By J. W. Nickerson, Manager, Industrial Relations Division, Bigelow, Kent, Willard & Co., Boston, Mass.

THE question "Do incentives pay?" can hardly be answered by a direct "yes" or "no". Webster gives as synonyms of "incentive" the words "motive" and "encouragement." All would agree that right motives and proper encouragement pay. On the other hand, wrong motives and encouragement toward wrong actions obviously do not pay.

Incentives of one kind or another have always been used to induce people to work. Since the age of barter it has been chiefly the money motive. Today managements should be seriously considering the form in which remuneration should be given so that their companies may be felt to be desirable places of work. In addition to basic wages, should there be a pension plan, an insurance plan, a guaranteed work plan, a vacation plan, a profit sharing plan, or a thrift plan? All of these are types of compensation. All may be considered as incentives toward securing and retaining employees in a plant. They may or may not be more of an incentive than the equivalent in straight wages, depending upon local conditions and the point of view of the employees.

Management's Concern with Wage Payment Methods

Beyond the question of securing and retaining employees comes the question as to the best methods of paying wages, first for the satisfaction and well-being of the workers, and second in order to produce goods of the highest quality and lowest cost. This quest has led to wage incentive plans which are merely methods of paying workers in some degree for their effort instead of only for the time they spend at work. Profits and the possibility of salary increases have been the chief means of encouraging management to do their best. Wage incentives were established to provide the necessary economic motive among workers to increase their productivity.

The reason why many incentive plans and piece rates have been to a large extent unsatisfactory in the past is because they have been based on what has been done, or somebody's opinion of what could be done, instead of upon a scientific study of what is reasonable to expect. Capable workmen who have exceeded past records or the amounts decided upon by those in charge have been penalized by having their piece rates cut. This has naturally led to bad labor relations and caused the whole incentive idea to be condemned.

Incentive Idea is Basic

Yet the incentive idea is at the base of our whole industrial system. From childhood up all of us are interested in competition, in accomplishing results, in equaling or exceeding standards, in being rewarded in accordance with our performance. All of us are different in our capabilities. We should, of course, like to be sure that the tasks or standards which are established are reasonable. Rather than the old ruthless piece-work practices, where workers were heavily penalized for the neglect of management, we should like to see, and now usually do see, hourly rate guarantees sufficient so that the less capable or less fortunate workers are sure of a fair day's pay. On the other hand, those who, through additional skill, effort, and desire accomplish, on the same basis, a higher degree of productivity would like to have and should have the greater reward which their greater performance entitles them.

Productivity Dependent on Workers' Decision

When management has arrived at the height of its effectiveness, with the best of working conditions, equipment, planning, research, and methods, and when the workers are trained and, as a result of careful study, have a complete understanding of what constitutes a reasonable day's work, then the question of actual productivity depends upon the workers' decision.

This decision may hinge on many factors. It is natural that workers will put forth the effort which they believe to be best for their well-being, both as individuals and as groups, best for their mental and physical health, best for their standard of living, and best for their security. In the long run, the relationship between labor and management determines to a large extent the amount of effort which will be applied to production. A competent management should be able to acquaint labor with all of the facts regarding the two items of most vital import—production and wages. Labor should be willing to consider these facts objectively. When these steps are taken with complete honesty and cooperation there is little to fear.

Three General Methods of Paying Wages

No two sets of labor relations are alike. Therefore, when we arrive at the critical question, "How shall labor be paid for what labor produces?", it should be obvious that there cannot be one universal answer. There are really three general methods of paying wages:

1. A constant amount of money per unit of time spent, regardless of the amount of production.
2. A constant amount of money per unit of production, regardless of time spent.
3. Some combination of these two methods.

If everyone had the same capability and the same degree of willingness and was impelled equally by right motives, then it might be logical to pay according to the time spent. Since these conditions do not exist, it would seem highly desirable to pay in proportion to the effort expended, provided it were possible to be certain of a continually fair, accurate, and simple method of meas-

uring effort. These conditions are most difficult to attain, and therefore we are constantly faced with a dilemma. There will be inequalities and restrictions no matter what our decision.

A method for working out the most advantageous relationship between productivity and wages for all concerned is the use of a wage incentive plan. It should take into consideration both time and effort. Considering the human factors which are involved, it seems clear that this general question as to what method of payment to use should not be decided upon by management alone nor by the union alone. It should be decided in real agreement and understanding. Therefore, we should not claim that wage incentives are panaceas nor declare that every wage incentive plan is objectionable.

Basic Principles

Rather, in the establishment of wage incentive plans certain basic principles should be observed:

1. *Agreement on General Principles.* Since work and wages are among the most potent and vital factors in labor relations it is clear that top management, supervision, labor, and labor's representatives should be in real agreement concerning the general principles involved in the relationship of these factors. This calls for thorough discussion and understanding.

2. *A Foundation of Job Evaluation.* For every sound incentive plan, there should be a foundation of job evaluation. Where the nature of jobs has been changed, alterations should be made in the value of the skill, responsibility, and working conditions used in determining the job rate structure.

3. *Uniform or Varying Rates.* It should be decided whether or not all employees on the same job should receive the same basic hourly rate. If it is felt that individual employees should receive rates varying with merit, then an effort should be made to effect this aim through such objective and measurable factors as productivity, quality, length of service, and regularity of attendance.

4. *Individual Group, or Plant-wide Incentives.* Incentives may be applied to individuals, to groups, or to an entire division or plant. It is generally conceded that standards set on an individual basis have the greatest incentive. Such standards need to be set with the utmost care and undoubtedly tend toward the lowest unit

cost. The larger the group, the less the individual response. "Tight" and "loose" standards are less apt to be detected, changes in conditions are less likely to be reflected in standards, productivity is apt to be lower and cost higher. An advantage of plant-wide plans is that all employees receive the same bonus percentage and the jealousies and transfer difficulties that sometimes occur with group plans are eliminated. However, without the patriotic motive and without an unusual degree of leadership and cooperation, they are very difficult to inaugurate.

5. *The Production-Incentive Relationship.* A wage incentive plan is most often defined by the fundamental relationship which exists between productivity and wages. There are two vital factors to be considered:

(a) The percent of standard productivity at which additional remuneration begins, and
(b) The participation given the employee, that is, the ratio of increase in wages to increase in productivity.

Where management realizes the importance of exercising the optimum degree of engineering in constantly improving its method of operation, in scheduling its flow of material and services, in maintaining its standards to correspond with its technological progress, and in training its employees to accomplish their tasks, then it would appear wise to start the payment of wages in excess of hourly rates at 100 per cent of the standard productivity. In such a case, it also would seem best to pay employees one per cent in wages for each one per cent increase in productivity.

During the war many crudely established standards were used, often set by past performance. In these instances the incentive often commenced at a point lower than 100 per cent standard, and provided for less than 100 per cent participation by labor. This enabled a quick pickup in production and prevented excessive payments. In the reconversion period management should consider the gradual re-establishment of standards on a scientific basis, with a corresponding change in its production-incentive relationship. Often, and particularly in changing from group to individual incentives, this can be accomplished with increased production and earnings and lower cost.

6. *Simplicity.* The plan should be sufficiently simple to be thoroughly understood by those to whom it is applied. Over-simplification through failure to make proper allowances for recurring conditions may involve injustices. On the other hand, attempts to meet every slight variation may involve unwarranted complications. In any case, workers should understand the effect of their own efforts on their earnings.

7. *Quality Control and Improvement.* The desirable and economic degree of quality should be determined. Its attainment should in no way be sacrificed. A properly installed incentive plan should definitely improve quality. This is accomplished by the additional care and attention paid to the job in order to attain the goals set up by regularized methods. Where practicable bonuses should be established to include quality improvement.

8. *Improved Methods and Procedures.* The establishment of incentive standards should be preceded by basic engineering improvement in design, equipment, methods, scheduling, and material handling, not only to reduce costs to a minimum but to insure that increases in earnings may be really earned by increase in effort. Well-established and maintained procedures prevent uneven standards and inequitable earnings which lead to inharmonious labor relations.

9. *Based on Detailed Time Studies.* Standards should be developed from detailed time studies. A permanent record of standard elemental times for each unit of an operation eliminates the occasion for many arguments. A table of basic standard times prepares the way for proper introduction of technological improvements.

10. *Based on Normal Operation Under Normal Conditions.* In general, the production standard should be established by management as the amount of work performed per unit of time by a normal operator under general conditions.

11. *Changes in Standards.* The plan should provide for the changing of production standards whenever changes in methods, materials, equipment, or other controlling conditions are made in the operations represented by the standards. In order to avoid misunderstandings, the nature of such changes and the logic of their amount should be made clear to labor or its representatives, with the opportunity to appeal through the grievance machinery.

12. *Considerations in Changing Standards.* Except to properly correspond with changed conditions, production standards once established should not be altered unless by mutual agreement between management and labor representatives. Standards which appear too "tight" are always brought to the surface by labor. Competent management will take appropriate action by rectifying conditions, training the employees, or altering the time allowances. Inevitably there will be a few standards which are too loose. If left alone they may be of value as symbols of good faith. An excessive number of loose standards indicates that management has failed in its engineering technique or its understanding of labor relations. This is an economic misfortune for all concerned, and its correction should be sought. It is not wise to attempt this arbitrarily and unilaterally. Nevertheless, this situation is usually as disturbing to union officers as to management. Where these officers have been able to rise to the courage of their convictions and where management has attained some degree of humility as to its errors, means have been found to rectify the condition and a new start has been made.

13. *Keep Temporary Standards at Minimum.* The practice of establishing temporary standards in new plants or on new operations (because of the desires of both management and lavor to have incentive work before permanent standards can be set) should be kept at a minimum. It should, in any event, be made clear to all that the standards are temporary and for a reasonably short period only.

14. *Avoid Indiscriminate Use of Special Payments.* Under ordinary circumstances the employees' basic hourly rates should become guaranteed rates. In some instances, such as in the case of experimental work, teaching other employees, and so on, it may be desirable to provide for special bonuses. Care should be taken, however, that the whole principle of incentive should not be broken down by the indiscriminate use of such special payment.

15. *Incentives for Indirect Workers.* Recently there has been an increasing demand on the part of labor for incentive payment for indirect workers. This has been so because often workers on direct production jobs for which little training is needed are receiving, by the addition of substantial incentive earnings, more total wages than skilled indirect workers. The wisest course for the

manufacturer in meeting this demand is to determine the specific functions of indirect workers and the time allowances necessary for their performance. This can sometimes be done as readily as in the case of direct workers and many times with more pronounced effect. However, if the exigencies of the situation demand that some form of incentive payment be applied to indirect workers as a whole, or in groups, then the best possible measures of their effort should be sought.

Some companies have been tempted to pay the indirect workers a bonus depending only upon the production per man hour or efficiency of the direct workers. This involves fallacious reasoning. Merely to pay all or a portion of the indirect workers without any measure of the productivity of the indirect workers is not only an uncontrolled increase of pay, but tends to destroy the value of the direct workers' incentive.

Some companies have been able to solve this problem when a prompt solution has seemed necessary by an intermediate method which has resulted in greater productive effort, higher earnings, and lower cost. This has been done by means of studies to determine the approximate number of indirect employees necessary at different ranges of group and plant activity, and measuring the activity in terms of productive standard hours plus any outstanding variables which predominate in measuring the indirect effort. Although expediency may demand such a solution as described, the soundest and fairest practice calls for a detailed study of individual indirect jobs with remuneration a function of the effort expended. Therefore, such an expediency should be carefully planned so that it may be temporarily and readily convertible to a properly engineered plan when time and conditions permit.

It should be noted that clerical work is in the same category from this point of view as factory indirect. It can be and has been handled in the same manner as other indirect work. This is most important to realize in these times of clerical union organization.

16. *Thorough Understanding of Human Relations Involved.* Finally, it should be emphasized that unless management is prepared to work on the problem with a thorough understanding of the human relations involved it had better have no wage incentive plan. Whereas such a plan may be a progressively constructive force for increased production, it may also be a means of disrupt-

ing labor relations and of actually lowering production. Management must be firm in retaining its proper functions; obviously, whatever manages *is* management. With firmness, however, must go a friendly comprehension of labor's point of view. There should be a willingness to impart to labor a complete understanding, to patiently entertain grievances in whatever manner may be provided.

Wartime Experience

During the period of wartime wage stabilization, we in the Management Consultant Division of the War Production Board had an opportunity to obtain on a large scale definite data as to the effect of wage incentives in productivity, wages, and labor costs. On the average, an increase of about 40 per cent in production per man hour occurred in the first ninety days of operation. This increase was usually immediate and held approximately true regardless of industry and area.

As an indication of the relative effectiveness of plans, it is interesting to note that those plans applying to individual workers and based on time study showed increased productivity averaging 60 per cent. In contrast, all other types of plans, including those based on past performance and those applying to departments and whole plants showed increases of only one-half as much or 30 per cent. It was also found that the average wage incentive plan brought about an increase of 15 to 20 per cent in wages and a labor cost reduction of from 10 to 15 per cent.

Such economic results are striking and vital. It is generally conceded that greater productivity is the real requisite for a higher living standard. The higher wages which accompany it are not inflationary, and the lower costs contribute to lower prices. To complete the picture and to be able to state that a particular wage incentive plan "pays", we must be sure that it is justly conceived, scrupulously maintained, thoroughly agreed upon and understood.

CONTROL OF PRINTED FORMS

By Charles F. Margeson, Accountant,
The Henry & Wright Mfg. Co., Hartford, Conn.

IT HAS been said that the only way accounting can justify itself in a business organization is by contributing towards the realization of more profits. In pointing the way to manufacturing efficiencies, we often overlook the fact that within our own domain there are many things that can be improved with respect to the profit objective. Notable among these is the matter of printed forms, the tools which implement our complex systems of organization. Our company's home unit is a medium-sized manufacturing plant producing a varied line of automatic high-speed mechanical presses, sensitive drilling machines, and special machinery, in addition to a regular volume of replacement parts. Operations carried on here include executive and financial functions, home-office sales management, ordering, and billing.

Physical Control

Prior to inaugurating a form control system, our troubles in this respect fell into two principal classes; first, a lack of physical control, and second, unsatisfactory printed forms. The former included principally unobserved depletion of stock on forms which require considerable time to purchase, difficulty in conveniently locating items rapidly when desired, lost clerical and supervisory hours spent in "going after" individual items in the stock room, and need to order large quantities in advance beyond economic requirements. These problems were not confined to printed forms only, but were also encountered in connection with office supplies, stationery, and sales literature.

Adequacy of Printed Forms

The second question concerned itself with the actual forms that were being printed. This consisted of the following major groups:

1. Creation or continuation of forms that were so poorly designed that many clerical hours were lost annually due to misinterpretation, to difficulty in writing or in typing

thereon, and to many other flaws of faulty planning.

2. Lack of control over obsolescence in forms and over the failure to incorporate new factors at reordering time.
3. Higher printing costs due to paper specifications that were not related to standard stock sizes, thus causing much cutting waste, and due to ordering grades of paper not always best suited to the particular situation.
4. Lack of an over-all plan for numbering of forms to permit easier routines for requisitioning, purchasing, and stock.

We also noticed the fact that we had a large number of post binders of different design, accomodating sheets of varying sizes with several sizes of hole diameters. This in itself was a source of continual expense and nuisance because of reorder problems, and because of our inability to interchange used covers. This was not confined to post binders, but extended to other things such as varying card sizes suitable for certain file drawers only. Type faces were almost as varied as the forms to be printed, and some items being mailed to our customers conveyed the erroneous impression that we were producing under mid-Victorian conditions. With the ever-increasing demands put on us by the accelerated war activity, conditions eventually reached a point where a thorough change had to be made to correct the existing situation. The actual "reconversion" was assigned to a member of the accounting department.

Storeroom for Office Forms and Supplies

To put part of the plan into immediate effect, it was decided to build an enclosure around the area where printed forms, stationery, and office supplies were stocked. This, when completed, was put under lock and key. An open letter to office employees, bearing an official's signature, was then posted, advising all concerned that a specific clerk was being assigned full responsibility for the contents of the stockroom, and that aside from a small supply kept near the general offices, all requests were to be made and filed on a semiweekly basis.

Collection of Sample Forms

Within the stockroom a house cleaning was begun, and items that seemed related in function were moved closer together. Of

course this was only a starter. Several copies of every printed form in the room were collected and put in a pile. A tour was then made of all factory and office departments; clerks and department heads were asked for samples of items they were using. These, too, went into the pile. Last but not least, a review of purchasing record cards covering printed forms was made, and samples of items overlooked were dug up from their hiding places.

By that time we had created quite a sizable heap of samples in all sizes, shapes, colors, and functions, which for sheer bulk was a problem in itself. It was decided to sort out this mass of papers into major departmental classifications. For various reasons, in our type of business, these fell into the following eleven groups: accounting and financial, payroll, timekeeping, order and billing, purchasing, engineering, production control, inspection, personnel, sales, and general miscellaneous. Having broken our pile into eleven smaller ones, we then attacked each individually, grouping related items within the departmental classes. As this was being done items that seemed discontinued were reviewed with the department head involved, and if no longer in use, were marked "obsolete".

Numbering System

At this point the inadequacy of our form numbering system became apparent. Primarily, there was no relation between items used by the same departments. Some forms had numbers while some did not. Those numbers assigned were obviously the result of the whims of many different people ordering at various times, and were of several basic types. To correct this, we adopted the arbitrary plan of renumbering all forms on a uniform basis. The particular style chosen was a code number which embodied the departmental prefix symbol, a number, the quantity of the latest order, and the date printed. Thus, a payroll form might look this way: "Form PA3 5M 12/45". Symbols for the eleven departmental classifications were as follows:

AC—Accounting and financial
EN—Engineering
GM—General miscellaneous
IN—Inspection
OB—Order and billing

PA—Payroll
PC—Production control
PE—Personnel
PU—Purchasing
SA—Sales
TK—Timekeeping

With this code plan, we then proceeded to number our sample piles for each classification with the revised form numbers. From that point, it was only a short step to write up on wide, ruled analysis paper a listing of the forms in each subdivision. In entering a form, we showed:

1. The new number
2. The old number
3. The title, and if none, the proposed title (in italics)
4. The manufacturer's number, if a standard stock item

This listing was merely a penciled work sheet, carefully written, but when completed was bound, and since has become a simple catalogue of all printed forms. It is also being used as a sort of progress book, as we have been marking it when a form is "reconverted" to the new system.

Purchasing Department File

The records that are kept in our purchasing department covering items of this nature consist of individual file cards for each form. Heretofore the cards were more or less haphazard, some showing numbers and some not, some with titles and some without. Because of this there were often more than one card for the same item. To correct this we marked the cards in accordance with the new numbering plan, and then arranged them in numerical order by departmental functions. Where more than one record was encountered they were combined, and where titles were incorrect or missing the proper changes were made.

Master File of Samples

Another important step taken was the creation of a master file of samples. This consists merely of a collection of every printed form in the organization, kept in a loose-leaf binder. It is kept in the accounting department, where it is continually referred to in

connection with proposed revisions of procedures, or in connection with instructions on some particular point, often in situations when the time to secure a plant copy would be inconvenient. As items are redesigned the old sample is replaced with the new one, thus keeping the book always up to date.

The new system has been in effect about six months and has already proved to be worth its weight in gold. As our basic problem consisted of two parts, the physical and the form controls, so the actual procedure has followed this pattern.

Purchase Requisitions

Physical control takes the following course: All requisitions for printed forms, office supplies, stationery, or sales literature are prepared by our stock control clerk, thus relieving the purchasing department of a burdensome function which it had previously been doing. Before this clerk presents her requisitions for approval, she knows:

1. Whether we have actually reached an "ordering point"
2. What delivery date is to be specified
3. Quantity in an economic ordering lot
4. Whether substitutes in stock can be used to satisfy the requirement

When she has prepared the requisition she secures an official approval on it, usually together with others which she is putting through, and then personally brings them to a specific member of the purchasing department. In addition to clearing the above requisitions she is also making a weekly survey of the stockroom for purposes of reordering items running low, and as she disburses stock items to employees she makes a note when the supply is dwindling. Incidentally, as a result of our first clean-up, we located enough obsolete forms to have a large number of scratch pads made up from them, at merely the cutting and binding cost. The same clerk replenishes the stock as it is received, and any work of a heavy nature is attended to for her by a member of the janitorial staff.

Printed Form Control

Printed form control has been so arranged that it ties into the above plan nicely. To begin with, during the normal course of

business we often run across things on forms which we do not care about, and which we would like changed. If the thought is not recorded then and there it is forgotten, and often lost forever. The form-control clerk keeps a folder on her desk into which are put suggestions for revision, obsolete items, sketches, etc. As items come up for reorder our first step is to look into this folder and begin with the corrections recommended. Of course, this is only hit-or-miss. The actual machinery consists of a series of tests which we apply to each form that comes up for first printing or for reordering. This is done before the requisition is put through for official signature. Our forms examination is based upon two check-lists which we have acquired during the last year; one published by the Hammermill Paper Co., and the other clipped from an article in "American Business". Both are developed around a series of questions of the "Yes-No" variety, relative to specific design of the form. A few of these are given below:

1. Does the present form duplicate others?
2. Can we adapt another form for this use?
3. Will it improve business performance?
4. Have all users been consulted for suggestions?
5. Is the wording clear?
6. Are recurring data printed?
7. Can a numbering system be used?
8. Are all copies justified?
9. Does the title indicate the purpose?
10. Has it been tested for typewriter spacing or for proper manual spacing?
11. Are filing data placed prominently near top?
12. Same sequence of items as other forms used in the clerical operation routine?
13. Most practical method of reproduction?
14. "One best" grade of material used?
15. Does this cut from standard stock sizes without waste?

After faithfully answering these and fifteen to twenty other questions, we are in a position to put through an intelligent requisition. Needless to say, almost 100 per cent of all forms existing before the new system were revamped when they came up for their first reorder.

Single Overhaul vs. Gradual Change

Our method, as can be seen, is a process of attrition, not a single, complete overhaul of all forms being used. Naturally that method is to be preferred, granted there is time, competent personnel, and management desire. The particular situation in our company at the time favored the method we are using. For this, it can be said that we are able to devote a great deal of attention to individual forms as they come up for reorder, that we simplify the printer's problem by keeping changes within reason, and we have found that the review of specific items provides considerable incentive to the organization. It is essential under this approach, however, to maintain the over-all viewpoint continually.

We have found it advisable to maintain a close contact with our printer who, knowing our program, has come forward with many valuable suggestions. Throughout the entire program to date we have also been conscious of the human factor to a large extent, Department heads, desirous of keeping a bad form as it is, or unwilling to abide by the stock control plan, are typical problems encountered. If patient explanation of the benefits available are not effective, we try not to make an issue of the disagreement. Time is a great solver of problems, and we have usually found that as new supervisors succeed the incumbents, we are able to work better with the new heads. By attempting to turn every change of supervisory personnel or organization to our advantage, we have found that the system has had very few real obstacles in its path.

Conclusion

To summarize, we are now realizing the benefits of adequate stock control, with substantial savings in wasted clerical time and in stock cost. Our forms-control plan is yielding greater efficiencies in the clerical and stock elements. In addition, we have developed a more wide-awake attitude through our "good housekeeping", and through the organization's realization that suggested changes or improvements will be considered carefully. Our policy is strictly a forward-looking one, and plans for the future include a standardization program for type styles and over-all appearance, a current revision system for catalogue text and style, and a stock card control for items in the stockroom to eliminate the need for a weekly physical check.

OUR OPEN FORUM

College Training for Industrial Accountants

Editor, N. A. C. A. Bulletin:

I have read with keen interest the timely article written by Stanley A. Pressler for the July 1, 1946 issue of the *Bulletin* and sincerely hope that it may stimulate the executive industrial accountant to contribute to the improvement of college accounting curricula, in accordance with Professor Pressler's desires.

I wonder, however, if Professor Pressler has not placed too great a burden upon the accounting executive, particularly if, as he intimates, the executive is expected to keep himself informed of developments in the academic training for his profession, and to take the initiative in contributing to this development. Surely the initiative must be taken by the educator, as, of course, has been done by Professor Pressler in presenting the problem.

In studying the suggested program, several questions come to mind. It has been my opinion for some time that the accounting student devotes himself to too great an extent to the analysis and solution of intricate advanced problems. The situations presented in these problems are in most cases by no means analogous to situations with which he may be confronted in practice and therefore have little practical value. This part of the curriculum is, of course, justified on the grounds that it is an integral factor in the development of reasoning ability and the analytical "accounting" mind. Furthermore, it is a "must" for the student who envisions a career in public accounting. For the future industrial accountant, however, I believe it may be overemphasized.

Perhaps the greatest deficiency, in my opinion, in collegiate training for the accounting student, is in the methods field. While the graduate is equipped to deal with theoretical problems far beyond the scope of the work he may expect to perform in the early stages of his business career—and which he will meet only occasionally when he has advanced to a position of responsibility—he has had relatively no exposure to the problem of finding the "one best way" of executing each function of the accounting department. Such training, incidentally, may be put to immediate use, for much effective work in methods improvement may be instigated by the individual who is actually processing detail.

Surely in the present-day large business organization the problem of maintaining accounting operating costs at an irreducible minimum is a major responsibility of the executive accountant, perhaps second only to the provision of adequate service to management. The accounting student has been exposed exhaustively to many phases of the control of production and dis-

tribution costs, but only superficially, if at all, to the "cost of finding out how much it costs". Surely the concept of the accounting department as a production department is a sound concept, in that it processes the raw material of the original record into the finished product of the interpreted results, and therefore should be subject to the same cost control measures.

I assume that Professor Pressler intends to provide methods training under the elective subject heading "Systems," but certainly feel that it is of sufficient importance to be listed as required. I am also curious as to the scope of the "Systems" course, since emphasis is often placed upon internal check and control under this title. I believe that it should properly embody at least a comprehensive study of form design, of the various mechanical accounting devices (which might well be developed into a problem course in selection from alternatives), and the principles of work simplification, with additional training in job instruction and job methods.

THOMAS L. MORISON,
Boston Chapter.

INSURANCE COVERAGE

Editor, N. A. C. A. Bulletin:

Mr. C. B. Nickerson of the Boston Chapter has asked in the July 1, 1946 *Bulletin* that other members describe in the Forum Section how their companies go about establishing the amount of insurance to be carried. Since we have just been through the problem it may be helpful to tell of our solution. Curiously enough, this solution has been prohibited by the State Insurance Commissioner of Massachusetts, although I understand that there is agitation for legislation which will permit "replacement value" fire insurance to be written on buildings and machinery and equipment.

Realizing that our recoveries under the standard form of an insurance contract would fall far, far short of providing funds necessary to replace a building and its equipment, with a corresponding serious impairment of working capital, we have insured all of our insurable permanent assets at replacement cost. By using, for example, the index of building costs of the American Appraisal Company, or some similar index, we have agreed with our insurance companies that our replacement costs are X dollars and agree to carry X dollars of insurance on that property. In the event of loss we will recover from the insurance company the full new cost of replacing the destroyed building providing, however, that we actually do replace the building. If the insured elects not to replace the property then recovery under the insurance contract is what it would have been under a standard insuring clause. The premium rate is the same as that for the standard policy.

It is our opinion that with the present inflated building costs this is the only prudent procedure since on a modern plant fully equipped with sprinklers the cost of fire insurance is relatively small.

F. M. HADLEY,
Indianapolis Chapter.

COST CURRENTS

Cost Data Required By Pricing Formula In O. P. A. Extension Law—As finally enacted, the new OPA bill contains the so-called Barkley Amendment, under which 1940 is the base period, providing for ceilings not less than base period prices plus cost increases since, both computed as industry-wide averages. The formula is deemed met, however, if ceilings set allow for 1940 average margins on average current costs.

If the industry is considered as one in which price increases will not promote expansion, current average costs plus a reasonable profit are specified as adequate, regardless of other formula.

In applying for price increases, the initiative rests with the various Industry Advisory Committees. The committees must submit comprehensive cost data to the administrator, who is required to act within sixty days. An appeal may be taken from the administrator's decision to the Emergency Court of Appeals existing under the original Act.

Council Named to Expedite Section 722 Claims—Companies having pending claims for excess profits tax refunds under Section 722 of the Internal Revenue Code received increased assurance that their applications will be processed within a reasonable length of time, with the establishment of a fifteen-man council to function above the field agent level in connection with this section of the code. Initially, the council will undertake to effect settlement of at least a portion of the 600 cases sent to the U. S. Tax Court, which have not yet been heard. Revision of the Internal Revenue Bureau's recently issued bulletin on the administration of Section 722 will also be within the province of the council.

Headed by Charles D. Hamel, first chairman of the Board of Tax Appeals, predecessor of the Tax Court, the council includes five accountants as well as attorneys and revenue agents. It is thought possible that claims will continue to be filed until 1950 but it is hoped to cover the bulk of the work within two years and it is understood that the personnel appointed to the council were asked to commit themselves to serve for that period of time.

Study Indicates Need of Travel Expense Standards—With salesmen's traveling expenses in the 92 companies amounting to approximately one-and-one-third per cent of net sales, a partial return to the one-and-one-half per cent of 1940 from the less-than-one per cent of 1944, a study prepared by the American Management Association is strongly indicative of general absence of full-scale control methods. Procedures reported used include comparisons with prior performances of salesmen and comparisons among salesmen, as well as some form of executive review. Development of standards linked to sales territories and types of customers was mentioned in a few cases.

The study was based upon reports obtained from companies with annual sales between $500,000 and $307,000,000. For periods in 1946, automobile expenses accounted for 31 per cent of all traveling expenses and were followed by: meals 18 per cent, hotel rooms 14 per cent, entertainment 14 per cent, transportation other than auto 12 per cent, and miscellaneous items 11 per cent. Entertainment expenses showed the most marked recent increase.

Replies submitted by companies for the purposes of the study indicated the existence of an inclination to welcome controls. Diminishing margins supply the strongest incentive, as with all distributing expenses. The Treasury Department's rule of thumb requiring expenses deducted for taxes to be "ordinary and necessary" supplies another. Public and interdepartmental criticism are also factors. Sales managers are stated to be particularly interested in determining a reasonable basis on which to judge the productivity of entertainment expenses.

Distribution and Selling Costs Claim Attention of Management—A recent survey undertaken by the Wall Street Journal indicates that many moves to cut distributing and selling costs are being thought out by corporate officials. If the industrial accountant is ready with the particulars of current costs and is in a position to reduce proposed plans to estimates of outlay couched in the same terms, there will be greatly increased likelihood of well-grounded measures being adopted. As in management decisions on factory operations, two principle elements are foremost, namely, what does it cost to do what we are doing and what would it cost to do what we are considering?

The distribution problems now under consideration take the form, according to the survey, of decisions between selling through wholesalers or directly, discarding or retaining casual customers, maintaining parallel sales organizations for different lines or a single organization, moving nearer to raw materials or customers or staying put, establishing or abandoning warehouse points, and similar alternatives. Knowledge of customer and wholesaler servicing costs and cost of sales, as well as of sales office overheads and of delivery costs for varying transportation methods and locations, will help to spotlight specific proposals as reasonable or unreasonable and thus supplement in a very necessary way the factors already being weighed.